

ABSTRACT

Provided are cartridges, apparatuses and methods for purifying a liquid chemical. The cartridges include a conduit connected to receive a flow of a chemical to be purified. A packed section in the conduit comprises a purification material. The ratio of the length of the packed section to the inside diameter of the conduit is from about 8:1 to about 200:1. The flow of the chemical to be purified contacts the purification material, thereby producing a flow of a purified chemical. This invention has particular applicability to the semiconductor manufacturing industry.